

competition and is weakest in the breadth of subject matter covered. There is, for example, no reference to transport through gap junctions between cells. Perhaps the most serious omission is the lack of any discussion of the transport of macromolecules across membranes. The translocation of proteins, peptides, hormones, etc. across cell membranes after all is a large and important area of the subject. Furthermore, solute and electron transport processes in chloroplasts, mitochondria and endoplasmic reticulum do not feature

prominently, if at all, and again one might have expected some treatment of these topics.

Adding up the pluses and minuses, the author has managed to explain some of the basic elements of membrane transport in a comprehensible manner for the introductory student. More comprehensive treatments, however, are to be found in the range of general texts on cell membranes published in the last few years.

P.J. Quinn

Mitochondria 1983. Nucleo-Mitochondrial Interactions

Edited by R.J. Schweyen, K. Wolf and F. Kaudewitz

Walter de Gruyter; Berlin, New York, 1983

642 pages. DM 240.00

I have never been to Schliersee, but from the snapshots in the front of the book it seems like a pleasant place to hold a conference. In July 1983 it was the venue for the third time for a meeting organised by the Genetics Institute of the University of Munich. The previous meeting, in 1977, took place at a time when studies on mitochondrial genes were beginning to burgeon. By 1983, the molecular biology of mitochondria had really come of age, with older problems, like those of transcription and the processing of mitochondrial RNA, rubbing shoulders with newer ones related to the nuclear genes involved in mitochondrial biogenesis. The Proceedings in this book are themselves a kind of a snapshot, a 650 page record of the progress that had been achieved at that point in time towards a full understanding of that dual encoded system and the mechanism of interaction of cytoplasmic and mitochondrial translation products.

The papers are grouped into five sections: Replication and transcription of mtDNA, RNA processing and splicing, Organisation and expression of mitochondrial genes, Nuclear control of mitochondrial functions, and Import of proteins into mitochondria. There are also three mini-reviews: Mitochondrial genes, mutants, maps (Du-

jon), Mitochondrial gene expression (Grivell), and Import of proteins into mitochondria (Yaffe). These reviews are good and do put into context several of the papers presented at the meeting.

It is not clear whether these reviews were plenary lectures or were written for the purposes of the book. In any event they are very useful as this is a complex field, with the 'simple' mitochondrial genome showing a staggering variety in the mode of organisation and expression of a small set of genes, and with bits of mtDNA appearing in the nucleus and bits of chloroplast DNA being found in mitochondria.

I found it disappointing therefore that there were not more reviews, ideally summarising each of the book's own sections, because without them the non-specialist is unlikely to get a great deal out of this book, which thus, after all, ends up as yet another Conference Proceedings. Nevertheless, apart from those camera-ready typefaces which are too small or too faint for middle-aged eyes, the book is well produced and indexed, and will be a useful record for active workers in the field, although its current rate of development is such that July 1983 may already seem a very long time ago.

H. Baum